

WHAT IS CLAIMED IS:

1. A data transmission method for host and target devices, connected by a serial bus, said method comprising the steps of:
 - 5 performing bi-directional communication between said host and target devices; and
setting a data transfer method to be performed from a plurality of data transfer methods including a PULL model in which said target device reads data from
10 said host device, based on the bi-directional communication.
2. The method according to claim 1, wherein the data transfer methods further include a response model in
15 which a response is returned in a unit of block transfer, a simplified response model in which a response of the response model is to simplify, a Push model in which said host device writes data into said target device and an Isochronous model using an isochronous transfer.
- 20 3. The method according to claim 1, wherein the host device sets the data transfer method, set in said target device, as a data transfer method for said host device.

4. The method according to claim 1, wherein the PULL model is a PULL data transfer method in which data transfer is performed by reading data of said host device by said target device.

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5. The method according to claim 1, wherein the serial bus is a bus adapted to or based on the IEEE 1394 standards.

10 6. The method according to claim 1, wherein the serial bus is a bus adapted to or based on Universal Serial Bus standards.

7. The method according to claim 1, wherein said host
15 device provides image data.

8. The method according to claim 1, wherein said target device forms a visible image, based on the image data, on a print medium.

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9. The method according to claim 1, wherein said target device stores the image data into a storage medium.

10. An image processing apparatus comprising:

communication means for performing communication with a target device by the data transfer method in claim 1; and

5 transmission means for transmitting image data to said target device via said communication means.

11. An image processing apparatus comprising:

communication means for performing communication
10 with a host device by the data transfer method in claim 1; and

processing means for processing image data received from said host device via said communication means.

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12. A data transmission apparatus connected to a serial bus, comprising:

communication means for performing bi-directional communication with a target device; and

20 setting means for setting a data transfer method to be performed from a plurality of data transfer method including a PULL model, based on the bi-directional communication.

13. The apparatus according to claim 12, wherein the data transfer methods further include a response model, a simplified response model, a PUSH model and an isochronous model.

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14. The apparatus according to claim 12, wherein said setting means sets a data transfer method, set in said target device.

10 15. The apparatus according to claim 12, wherein the PULL model is a PULL data transfer method in which data transfer is performed by reading data of said host device by said target device.

15 16. The apparatus according to claim 12, wherein image data is transferred.

17. A data transmission apparatus connected to a serial bus, said apparatus comprising:

20 communication means for performing bi-directional communication with a host device; and

transfer means for performing data transfer with said host device by a data transfer method set from a plurality of data transfer method including a PULL model,

based on the bi-directional communication.

18. The apparatus according to claim 17, wherein the data transfer methods further include a response model,
5 a simplified response model, a PUSH model and an isochronous model.

19. The apparatus according to claim 17, wherein the data transfer method is set by said host device.

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20. The apparatus according to claim 17, wherein the PULL model is a PULL data transfer method in which data transfer is performed by reading data of said host device by said target device.

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21. The apparatus according to claim 17, further comprising formation means for forming a visible image based on data received by said transfer means on a print medium.

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22. A data transmission system for transferring data through a serial bus, comprising:

communication means for performing bi-directional communication between host and target devices; and

setting means for setting a data transfer method to be set from a plurality of data transfer methods including a PULL model, based on the bi-directional communication.

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23. The system according to claim 22, wherein the data transfer methods further include a response model, a simplified response model, a PUSH model and an isochronous model.

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24. The system according to claim 22, wherein the PULL model is a PULL data transfer method in which data transfer is performed by reading data of said host device by said target device.

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25. A data transmission method of host and target devices which are connected by a serial bus, said method comprising the steps of:

transferring data from said host device to said target device, by isochronous transfer or asynchronous transfer; and

transferring a procedure signal for transfer of the data to said host and target devices by common asynchronous transfer.

26. The method according to claim 25, wherein the asynchronous transfer includes a Push Buffer model in which said host device writes data into said target
5 device and a Pull Buffer model in which said target device reads data from said host device.

27. The method according to claim 25, wherein said host device sets a data transfer method corresponding to
10 said target device, based on the procedure signal transferred by the common asynchronous transfer.

28. The method according to claim 25, wherein said host device selects the isochronous transfer or the
15 asynchronous transfer based on the procedure signal transferred by the common asynchronous transfer.

29. The method according to claim 25, wherein the serial bus is a bus adapted to or based on the IEEE 1394
20 standards.

30. The method according to claim 25, wherein the serial bus is a bus adapted to or based on Universal Serial Bus standards.

31. The method according to claim 25, wherein said host device provides image data.

5 32. The method according to claim 25, wherein said target device forms a visible image, based on the image data, on a print medium.

33. The method according to claim 25, wherein said
10 target device stores the image data into a storage medium.

34. An image processing apparatus comprising:
communication means for performing communication
15 with a target device by the data transfer method in claim 25; and

transmission means for transmitting image data to said target device via said communication means.

20 35. An image processing apparatus comprising:
communication means for performing communication with a host device by the data transfer method in claim 25; and

processing means for processing image data

received from said host device via said communication means.

36. A data transmission apparatus connected to a
5 serial bus, comprising:

transfer means for transferring a procedure signal for data transfer by asynchronous transfer common to a target device; and

transmission means for transmitting data to be
10 transmitted to said target device by isochronous transmission or asynchronous transmission.

37. The apparatus according to claim 35, wherein the isochronous transfer includes a PUSH buffer model and a
15 PULL buffer model.

38. The apparatus according to claim 36, wherein said transmission means sets a data transfer method corresponding to said target device, based on the
20 procedure signal transferred by the common asynchronous transfer.

39. The apparatus according to claim 36, wherein said transmission means selects the isochronous transfer or

the asynchronous transfer, based on the procedure signal transferred by the common asynchronous transfer.

40. The apparatus according to claim 36, wherein the
5 data transmitted by said transmission means is image data.

41. A data transmission apparatus connected to a serial bus, comprising:

10 transfer means for transferring a procedure signal for data transfer by asynchronous transfer common to a host device; and

reception means for receiving data from said host device by isochronous transfer or asynchronous transfer.

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42. The apparatus according to claim 41, wherein the asynchronous transfer includes a PUSH buffer model and a PULL buffer model.

20 43. The apparatus according to claim 41, wherein said host device sets a data transfer method corresponding to said reception means, based on the procedure signal transferred by the common asynchronous transfer.

44. The apparatus according to claim 41, wherein said host device selects the isochronous transfer or the asynchronous transfer based on the procedure signal transferred by the common asynchronous transfer.

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45. The apparatus according to claim 41, further comprising formation means for forming a visible image based on data received by said reception means on a print medium.

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46. A data transmission system for transferring data through a serial bus, comprising:

first transfer means for transferring a procedure signal for data transfer by common asynchronous transfer
15 to host and target devices; and

second transfer means for performing data transfer between said host and target devices by isochronous transfer or the asynchronous transfer.

20 47. The system according to claim 46, wherein the asynchronous transfer includes a PUSH Buffer model and a PULL Buffer model.

48. The system according to claim 46, wherein said

host device sets a data transfer method corresponding to said target device, based on the procedure signal transferred by the common asynchronous transfer.

5 49. The system according to claim 46, wherein said host device selects the isochronous transfer or the asynchronous transfer based on the procedure signal transferred by the common asynchronous transfer.

10 50. A computer program product comprising a computer readable medium having computer program codes, for executing data transmission of host and target devices which are connected by a serial bus, said product comprising:

15 communication process procedure codes for performing bi-directional communication between said host and target devices; and

 setting process procedure codes for setting a data transfer method to be performed from a plurality of data
20 transfer methods including a PULL model.

51. A computer program product comprising a computer readable medium having computer program codes, for executing data transmission of host and target devices

which are connected by a serial bus, said product comprising:

first transmission process procedure codes for transferring a procedure signal for data transfer by
5 common asynchronous transfer to said host and target devices; and

second transmission process procedure codes for performing the data transfer between said host and target devices by isochronous transfer or the
10 asynchronous transfer.